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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,021	04/26/2001	Masahiro Yamada	SON-2084	6932

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EXAMINER
SCHWARTZ, JORDAN MARC

ART UNIT	PAPER NUMBER
2873	

DATE MAILED: 04/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No:

09/842,021

Applicant(s)

YAMADA ET AL.

Examiner

Jordan M. Schwartz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004 and 11 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-8 and 10-114 is/are pending in the application.
- 4a) Of the above claim(s) 19-114 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-18 is/are allowed.
- 6) ☒ Claim(s) 3-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/19/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rottmann patent number 3,532,038 in view of Lewis patent number 3,598,475.

Rottmann discloses the limitations therein including the following: an optical device (abstract) comprising a first optical portion made of a first optical material (Figures 2, 9 and 11, "member 6", column 4, line 64, column 5, lines 3-10); the first optical portion having a concavity (Figures 2 and 9, "member 6", and column 5, lines 39-45); a second optical portion disposed within the concavity (column 5, lines 39-45 re the refractive fluid within the concavity); the second optical material of a different refractive index than the first refractive material (column 6, lines 11-15); the first optical portion having the first and second flat surfaces as claimed (Figures 2, and 9, "member 6"); the second optical material comprising a liquid-like material filled in the concavity (column 5, lines 39-45); and a layer of optical material for sealing the concavity (Figures 2 and 9, "cover lens member 7" and column 5, lines 39-45).

Rottmann discloses as is set forth above but does not specifically disclose the liquid as an optical oil. However, Rottmann discloses the liquid being formed in the concavities for the purpose of forming optical lenses within concavities (column 5, lines

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39-56). Lewis teaches that when using a liquid substance to be filled within concavities for the purpose of forming lenses (column 2, line 20 to column 3, line 29), that the liquid material can be in the form of an optical oil for the purpose of providing a liquid lens of high quality and easy construction (column 3, lines 3-29). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the liquid material of Rottmann as an optical oil since Lewis teaches that when using a liquid substance to be filled within concavities for the purpose of forming lenses, that the liquid material can be in the form of an optical oil for the purpose of providing a liquid lens of high quality and easy construction.

Rottmann further discloses the concavity having a symmetry axis with a shape substantially that of an arc (Figure 2); the index of refraction of the second optical material within the claimed range of claim 6 (column 6, the table of liquids). The refractive index of the first optical material will inherently be within the range of claim 5, this being reasonably based upon the first optical material being disclosed as glass (column 5, lines 3-6).

Claim 7-8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rottmann et al in view of Hawkins et al patent number 5,824,236.

Rottmann et al discloses as is set forth above and further discloses the following: a third optical portion comprising a transparent third optical material (Figure 11, "127", column 10, lines 21-28 with "127" as a glass plate i.e. transparent); the first optical portion between the second and third optical portions (Figure 11 with first portion "6" being between second portion of the fluid in the concavity and the third portion "127").

Rottmann discloses as is set forth above including the liquid being formed in concavities on a substrate to form a lens array (abstract) but does not specifically disclose the substrate and/or the liquid material as set forth in claims 7-8. Hawkins et al teaches that in an optical device that uses a liquid within concavities of a substrate to form a lens array (Figures 3H, column 1, lines 18-20, column 5, line 23), that the substrate and/or the liquid material can be formed of oxides, particularly including one of silicon nitride, titanium oxide, or tantalum oxide, for the purpose of providing a lens array of improved optical qualities (column 4, line 51, column 5, line 23, column 2, line 27 to column 3, line 29). Therefore, it would have been obvious to a person of ordinary skill at the time the invention was made to have the substrate and/or the liquid material of the lens array of Rottmann et al as being formed of one of the materials as claimed in claims 7-8, since Hawkins et al teaches that in an optical device that uses a liquid within concavities of a substrate to form lens arrays (Figures 3H, column 1, lines 18-20), that the substrate and/or the liquid material can be formed of oxides, particularly including one of silicon nitride, titanium oxide, or tantalum oxide, for the purpose of providing a lens array of improved optical qualities.

Allowable Subject Matter

Claims 10-18 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: with respect to the allowable subject matter, none of the prior art either alone or in combination disclose or teach of the claimed limitations to warrant a rejection under 35 USC 102 or 103. Specifically, with respect to independent claim 10, none of the prior

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art either alone or in combination disclose or teach of the claimed optical system having the specific optical structure as claimed and specifically further with one of the first and second flat surfaces as claimed bonded to the claimed third flat surface. Specifically, with respect to independent claim 17, none of the prior art either alone or in combination disclose or teach of the claimed optical system having the specific optical structure as claimed and specifically further with the system comprising a slider of an optical head attached to a swing arm.

Response to Arguments

Applicant's arguments filed December 11, 2003 have been considered but, with respect to the rejected claims above, they are not persuasive. With respect to claim 3, applicant argues that if the examiner is to rely on Lewis, then a combination rejection should be made using Lewis as a teaching reference. While the examiner disagrees that the prior rejection was flawed for using Judicial Notice and for then citing Lewis when challenged, regardless, the examiner has now set forth a new 103 rejection of claim 3 using Lewis as a teaching reference as requested. With respect to claims 7-8, applicant argues that the motivation is prompted by hindsight. The examiner disagrees and believes that the proper motivation is set forth in the rejection above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jordan M. Schwartz whose telephone number is (571) 272-2337. The examiner can normally be reached on Monday to Friday (8:00-5:30), alternate Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached at (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jordan M. Schwartz
Primary Examiner
Art Unit 2873
April 14, 2004